

a shaft;
a rotor assembly mounted on the shaft;
at least one bearing supporting the shaft in the frame; and
a capacitance enhancement mechanism by which rotor to frame capacitance is increased, wherein the capacitance enhancement mechanism comprises a labyrinth, the labyrinth comprising a ground member, a shaft-voltage reducer, and one or more gaps disposed between the grounded member and the shaft-voltage reducer.

6. (Amended) The bearing system, as recited in claim 2, wherein a common mode voltage on the shaft is reduced by a scaling factor determined by the capacitive enhancement mechanism.

Please add the following new claims:

28. (New) A system for reducing voltage between elements of a rotating machine, the system comprising:

a capacitive enhancement mechanism configured to be coupled between a machine housing and a machine rotor, the capacitive enhancement mechanism having a capacitor formed by a pair of enhanced surfaces that undergo relative movement during operation.

29. (New) The system, as recited in claim 28, wherein the enhancement surfaces each comprise a grounded member and a shaft-voltage reducer, and where one or more gaps are disposed between the grounded member and the shaft-voltage member.

30. (New) The system, as recited in claim 29, comprising a dielectric material disposed to circulate within the one or more gaps.

31. (New) The system, as recited in claim 30, wherein the dielectric material is ionized to create a continuous path for current flow.

32. (New) The system, as recited in claim 28, wherein a common mode voltage is reduced by a scaling factor determined by the capacitive enhancement mechanism.

33. (New) A system for reducing voltage between elements of a rotating machine, the system comprising:

a housing;

a stator assembly mounted within the housing;

a shaft;

a rotor assembly coupled to the shaft and rotatably mounted within the housing via at least one bearing; and

a capacitive enhancement mechanism coupled between the housing and the rotor, the capacitive enhancement mechanism having a capacitor formed by a pair of enhanced surfaces that undergo relative movement.

34. (New) The system of claim 33, wherein the enhancement surfaces each comprise a grounded member and a shaft-voltage reducer, and where one or more gaps are disposed between the grounded member and the shaft-voltage member.

35. (New) The system of claim 34, comprising a dielectric material disposed to circulate within the one or more gaps.

36. (New) The system, as recited in claim 35, wherein the dielectric material is ionized to create a continuous path for current flow.